

Title (en)
ELECTRIC POWER STEERING DEVICE

Title (de)
ELEKTRISCHE SERVOLENKVORRICHTUNG

Title (fr)
DISPOSITIF DE DIRECTION ASSISTÉE ÉLECTRIQUE

Publication
EP 3196098 B1 20190605 (EN)

Application
EP 15873137 A 20151224

Priority
• JP 2014262244 A 20141225
• JP 2015183259 A 20150916
• JP 2015183265 A 20150916
• JP 2015183266 A 20150916
• JP 2015085953 W 20151224

Abstract (en)
[origin: EP3196098A1] [Problem] An object of the present invention is to provide a high-performance electric power steering apparatus that constitutes a control system based on a physical model, constitutes a model-following control that an output (a distance to a rack end) of a controlled object follows-up to a reference model, eliminates or reduces the occurrences of a noisy sound and a shock force at an end hitting without giving any uncomfortable steering feeling to a driver, and eliminates or reduces the shock force by changing model parameters and control parameters for a feed-back control section. [Means for solving the problem] The electric power steering apparatus includes a model-following control section that includes a feed-back control section which sets a viscoelastic model as a reference model within a predetermined angle at front of a rack end. The feed-back control section comprises a feed-back element to calculate a target rack displacement based on an input-side rack axial force and a control element to output an output-side rack axial force based on a position deviation between the target rack displacement and a rack displacement.

IPC 8 full level
B62D 6/00 (2006.01); **B62D 5/04** (2006.01); **B62D 101/00** (2006.01); **B62D 119/00** (2006.01)

CPC (source: EP US)
B62D 5/0463 (2013.01 - EP US); **B62D 5/0469** (2013.01 - EP US); **B62D 6/02** (2013.01 - US); **B62D 6/08** (2013.01 - US);
G05B 13/041 (2013.01 - US)

Cited by
CN111094110A; US11332183B2; US11459023B2; WO2019063176A1; WO2019101430A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 3196098 A1 20170726; **EP 3196098 A4 20180808**; **EP 3196098 B1 20190605**; CN 107107951 A 20170829; CN 107107951 B 20190326;
JP 6004141 B1 20161005; JP WO2016104569 A1 20170427; US 10059368 B2 20180828; US 2017297613 A1 20171019;
WO 2016104569 A1 20160630

DOCDB simple family (application)
EP 15873137 A 20151224; CN 201580069506 A 20151224; JP 2015085953 W 20151224; JP 2016532653 A 20151224;
US 201515512713 A 20151224